REMARKS

Objection to the Specification/Claims

Claim 1 and Claim 6 are amended to comport with the Examiner's outstanding suggestions and rectify mere typographical errors. The Specification is amended to rectify a mere typographical error. No new matter has been added and it is respectfully believed that these objections are overcome. In addition, Claims 3 and 10 were amended to include the term "glass." This is an element that was originally present in Claims 3 and 10 that was inadvertently omitted from being listed in the prior amendment of August 29, 2003. This element, i.e., glass, was never stricken or deleted from these Claims and this amendment merely corrects this mere typographical error in the prior amendment and provides the Applicant with all entitled claim protection. No new matter has been added.

Rejection under 35 U.S.C. Section 112

Claims 7 and 13 were rejected under 35 U.S.C. Section 112 as being indefinite and for failing to particularly point out and distinctly claim the subject matter that the Applicant regards as the invention. In particular, the term "polyimide based stiffening agent" appears to lack an antecedent basis. The term is amended to recited "stiffening agent consisting of a polyimide" to comport with previously amended Claim 1. No new matter has been added.

Therefore, it is respectfully believed that the rejection of Claims 7 and 13 under 35 U.S.C. Section 112 is overcome.

Rejection under 35 U.S.C. Section 102

Claim 1 was rejected under 35 U.S.C. Section 102 as being anticipated by EP 0 726 348 ("EPO '348"). Claim 1 specifically recites that "... a polymer substrate capable of retaining a physical structure at the application temperature; and a stiffening agent consisting of a polyimide adapted for treating the polymer substrate **and applied, wherein the polymer substrate with applied stiffening agent is capable of withstanding at least 100,000 cleaning pulses at the application temperature."**

This stiffening agent has been applied to the polymer substrate as disclosed on Page 11, Line 12 of Applicant's Patent Specification. Support for the "capability to withstanding at least 100,000 cleaning pulses at the application temperature" can be found on Page 13, Lines 8-10 as follows: "Most notably, the data shows that after 110,000 pulses the media with the preferred resin still had 90% of its original strength. The simulated baghouse testing indicates at 110,000 pulses there is more than 12 months simulated life on these filters." Therefore, no new matter has been added.

In marked contrast, EPO '348 as recited in Claim 1 requires: "A gas permeable fabric comprising a porous substrate treated with a composition comprising a fluoropolymer and a rigidizing film forming material." The fluoropolymer is a vital and crucial element in EPO '348 and must be applied to the substrate in conjunction with the rigidizing film forming material. Specifically, EPO '348 describes a Composition I in Table 1 on Page 4, Line 6 that does not include a fluoropolymer while there is a Composition II and Composition III in Table 1 on Page

4, Lines 7-8 that specifically includes a fluoropolymer. Page 4, Lines 42-45 of EPO '348 recites: "Each of compositions I, II and III provide a rigidized needle felt structure with adequate air permeability. However, **composition I leads to a decrease in tongue tear strength** (as measured according to DIN 53849/4) of the needle felt **as compared with untreated needle felt, whereas treatment with compositions II and III maintain or improve tongue tear strength.**" Therefore, the recited polymer substrate with applied stiffening agent will fail to withstand 100,000 cleaning pulses since EPO '348 specifically states that this combination of polymer substrate with applied stiffening agent, **without a fluropolymer**, will result in a composition that has a lower tongue tear strength than an untreated polymer substrate.

Consequently, it is respectfully believed that the United States Patent Office and the Federal Court of Appeals for the Federal Circuit, has steadfastly and properly held the view that for a proper 35 U.S.C. Section 102 rejection, a single reference, i.e., EPO '348, must identically describe each and every element of the rejected claim or else the claim fails as a proper rejection under this statute. In this case, EPO '348 does not disclose "....a polymer substrate capable of retaining a physical structure at the application temperature; and a stiffening agent consisting of a polyimide adapted for treating the polymer substrate and applied, wherein the polymer substrate **with applied stiffening agent is capable of withstanding at least 100,000 cleaning pulses at the application temperature.**" In fact, EPO '348 makes it very clear that the combination of polymer substrate and a stiffening agent consisting of a polyimide creates a weaker fabric than untreated fabric so that it absolutely would not be capable of withstanding at least 100,000 cleaning pulses at the application temperature.

It is respectfully believed that all claim limitations must be considered and it is important to consider the subject matter "as a whole" to take into account all limitations of the claims. Carl Schenck, A.G. v. Nortron Corp., 713 F2d. 782, 218 U.S.P.Q. 698 (Fed. Cir. 1983). In this case, the ability to capable of withstanding at least 100,000 cleaning pulses at the application temperature is wholly absent from EPO '348. Most polymer substrates with applied stiffener, as indicated by the Applicant's Specification will experience total failure as recited on Paragraph [0044], Page 14, Lines 36-39 as follows: "The combined average tensile strength and the combined average tear strength of the PAI resin treated aramid substrate as compared to an aramid substrate treated with a conventional epoxy resin is shown in FIGS. 7 and 8, respectively. As is noted, **the epoxy resin treated aramid substrate experienced a total filter failure prior to 110,000 pulses.**"

Also, it is respectfully believed that all functional language should not be ignored but is superbly designed for "particularly pointing out and distinctly claiming" the invention. In re Caldwell, 138 U.S.PQ. 243 (C.C.P.A. 1963). This limitation is not inherent or flows by accident from EPO '348 since EPO '348 specifically states that their fabric in combination with their rigidizing film decreases the strength of the fabric and makes it weaker than the fabric, by itself, without any treatment whatsoever. Since an untreated fabric cannot withstand 100,000 cleaning pulses at the application temperature, treated fabric with a lower tongue tear strength will be utterly destroyed under these conditions.

Therefore, Claim 1 overcomes the rejection under 35 U.S.C. Section 102 as being anticipated by EPO '348.

Claims 3-8 were rejected under 35 U.S.C. Section 102 as being anticipated by EPO '348 Since Claims 3-8 depend from and contains all of the limitations of Claim 1, as amended, Claims 3-8, are felt to distinguish from EPO '348 in the same manner as Claim 1.

Claims 9 and 15 were also rejected under 35 U.S.C. Section 102 as being anticipated by EP 0 726 348. Claims 9 and 15 specifically recites that: "...a plurality of pleats formed into the polymer substrate **at a temperature that is higher than the application temperature**..." An important improvement of the Applicant's Invention is that by applying a slightly higher temperature during the pleating process, the stiffening agent consisting of a polyamideimide does not continue to crosslink during exposure to relatively high application temperatures. Support for this amendment can be found on Page 11, Lines 21-23 and Page 12, Line 1, which recites: " In the preferred embodiment the treated substrate is then pleated by any suitable method, including a blade or push bar pleater. Due to the higher Tg of polyimides, the temperature during pleated **is raised** to approximately 430° F. dependent on the particular polyimide used, as is well known in the art." No new matter is added.

Therefore, this "heat treatment" of the pleats provides a significant advantage over EPO '348. It is respectfully believed that all claim limitations and functional language must be considered and cannot be ignored. The Federal Circuit has long held that a key element in the claim, not found in the directly pertinent prior art, cannot be ignored in the face of the fact that it led to the successful results produced by the device. In this case, EPO '348 specifically recites that the application temperature is **up to 280° C**. This is found on Page 2, Lines 7-9 as follows: "Shapeable, rigidizable gas permeable fabrics are used in a variety of industrial and

environmental applications. Of primary interest is their use as filter media. In certain applications, such filters must be able to withstand continuous exposure to extremely high temperatures **(up to 280° C)** without degrading." EPO '348 on Page 2, Lines 34-36 defines high temperature end-uses as: "End-uses for the fabric of the present invention may be divided into two categories: 'high temperature end-uses' refer to those requiring resistance to degradation at temperatures of about 200° C to 280° C for extended periods of time, and resistance at temperatures of about 280° C to 365° C for periods up to about 10 minutes. "The high temperature end use fabrics are defined as on Page 2, Line 40-44 of EPO '348 as: " 'Porous substrates' for use in the present invention may be woven or nonwoven, and may be made from a plurality of different fibers. For high temperature end-uses, suitable fibers include meta-aramids, para-aramids, aramid copolymers, polyamideimides, polyoxadiazoles, polyimides, polyetheretherketones, polyetherketoneketones, polybenzimidazoles, polytetrafluorethylenes (PTFE), glasses, ceramics, and blends thereof. Preferred substrates include those made from **meta-aramids (e.g. NOMEX)**...".

The pleating temperatures found in EPO '348 relate to **NOMEX**, which has a high application temperature **(up to 280° C)** for extended periods of time. These pleating temperatures are defined on Page 4, Lines 39-41 as follows: " The substrates obtained from the previous step are then pleated on conventional equipment at **temperatures between 200° C and 250° C** for periods ranging between 30 and 60 seconds under hand pressure. All samples prepared are pleatable at **all test temperatures**, although at lower temperatures the pleating time

is longer." Therefore, there is no disclosure of a pleating temperature that is higher than the application temperature with test temperatures being, at most, application temperatures.

In addition, it is respectfully believed, that the United States Patent Office and the Federal Court of Appeals for the Federal Circuit, has steadfastly and properly held the view that for a proper 35 U.S.C. Section 102 rejection, a single reference, i.e., EPO '348, must identically describe each and every element of the rejected claim or else the claim fails as a proper rejection under this statute. In this case, a pleating temperature that is greater than the application is not disclosed. This feature overcomes a significant problem by preventing crosslinking. Crosslinking breeds crystallinity, which leads to brittleness. Brittleness will cause the destruction of high temperature filter medium that is cleaned by pulse jets and cannot be tolerated.

It is respectfully believed that a proper application of a reference against a composition described and claimed in a patent requires broadly that the anticipatory composition be substantially the same as the anticipated composition in structure, function and result. By pleating at most the same or lower temperature as the application temperature, the resulting filter medium will continue to crosslink due to the heat of the application temperature. This will result in crystallinity and then brittleness of the filter medium, which will not function the same as the Applicant's claimed filter medium and will have very poor results.

Therefore, it is respectfully believed that Claims 9 and 15 overcome the rejection under 35 U.S.C. Section 102 as being anticipated by EPO '348.

Claims 10-14 and 16-18 were rejected under 35 U.S.C. Section 102 as being anticipated by EPO '348. Since Claims 10-14 and 16-18 depend from and contains all of the limitations of Claims 9 and 15, as amended, Claims 10-14 and 16-18, are felt to distinguish from EPO '348 in the same manner as Claims 9 and 15.

Therefore, it is now believed that all of the pending claims in the present application, namely, Claims 1, 3-18 are in condition for allowance. Favorable action and allowance of the claims is therefore respectfully requested. If any issue regarding the allowability of any of the pending claims in the present application could be readily resolved, or if other action could be taken to further advance this application such as an Examiner's amendment, or if the Examiner should have any questions regarding this amendment, it is respectfully requested that Examiner, please telephone the Applicant's undersigned attorney in this regard.

Respectfully submitted,

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Kevin M. Kercher
Reg. No. 33,408
Blackwell Sanders Peper Martin LLP
720 Olive Street, 24th Floor
St. Louis, Missouri 63101
(314) 345-6000
ATTORNEY FOR APPLICANT